

INDUSTRY HAPPENINGS

2020

****BLUE COLOR DENOTES NOTABLE EVENTS****

OCTOBER

5-9 WEFTEC Connect 2020
Online, WEF
Web: www.weftec.org

NOVEMBER

10-11 2020 Pipeline Leadership Virtual Conference
BMI
Web: plconference.com

17-19 2020 Pipeline Leadership Virtual Conference
BMI
Web: plconference.com

2021

JANUARY

26-28 2021 UCT
Nashville, Tennessee
Web: www.uctonline.com

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as required by 39 U.S.C. 3685

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WORLD TRENCHLESS DAY

September 23 2021

WHEN OPPORTUNITY KNOCKS...ANSWER THE CALL

BY DON RIGBY

There are 20,000 cities, 3,000 counties, and 48 states in the continental United States, and each entity is responsible for being a good steward of the rate payer and/or taxpayer. With the wide variance of geographic regions, populations and budgets, did you ever wonder how smaller communities operate with far fewer financial resources yet equally critical systems to maintain and optimize?

Regardless of an entity's size, within the sanitary collection system, controlling inflow and infiltration (I&I) is of critical importance. I&I may be viewed as a maintenance task, but when it's not addressed, it becomes a major burden on operating budgets with much higher costs to pump, transport, and treat twice the flow volume to the WWTP. Here is how one quaint, west-coast community is managing the situation.

Cottage Grove, Oregon – At a glance

- Population: 10,140
- Sanitary Sewer: 46 miles
- Total customers: 3,693
- WWTP: 13 MGD

LOCATION: 18 miles south of Eugene

- Covered Bridge capital of Oregon
- Elevation: 675 feet
- Rainfall: 47 inches

Knock. Knock.

Who is there?

One manhole structure rehabilitated at no cost. Interested?

This is a true story, but it is really the back-story that makes it so meaningful.

For months, the nine-person (FTE) Public Works maintenance crew at Cottage Grove, Oregon, was burdened by a two-page list of manholes that needed to be cleaned either weekly or every other week. Timing was right for a "Prove it to me first" demonstration, especially at zero cost.

If you have not experienced the rainy season in Oregon, think in terms of 1 to 3 inches of rainfall per day, non-stop, for

multiple days. "Relentless" is a word that comes to mind.

City of Cottage Grove civil engineer Ryan Sisson, P.E., asked his maintenance team to select the worst manhole in the community and it delivered. Yes, it was a brick structure. And yes, there were bricks missing. The manhole base was severely eroded, allowing unimpeded inflow from groundwater, and infiltration from runoff was flowing in around the chimney and manhole frame.

"Prove it to me first" delivered a positive outcome for a young contractor who was just starting out in the business with nothing to lose, and everything to gain. The City's engineering and maintenance team was so impressed with the final outcome, the free manhole structure earned Underground Technologies owner Doug Troyer a 15-manhole contract.



Once again, the first 15-manhole contract covered the City's highest priority structures due to the ongoing maintenance including wash-downs and clearing of solids. The 52 labor hours per year that were saved allowed supervisors to reassign those hours to other critical operations and maintenance activities.

Once the City recognized the wet weather peak flow at the WWTP dropped from 13 MGD to just more than 7 MGD, with just 15 manholes completed and elimination of one combined sewer connection, the City budgeted \$50,000 for another round of manhole repairs and are racing to get this project completed in advance of this year's rainy season.

Every small community and large sewer district may appear different, but the Inflow and Infiltration issues remain common and consistent no matter what size the system. According to US-EPA,



nearly half the flow to the WWTP is clean groundwater infiltrating into the collection system which can more than double the cost to pump, transport and treat than effluent.

Without calculating energy savings for pumping or labor dollars for cleaning, below is a real-world savings scenario for a single leak in a single manhole. The following example is based on the City's local, estimated treatment and rehabilitation costs; national costs will vary by region:

- One 5-gallon per minute leak in one manhole
- Estimated 60 minutes per hour x 24 hours = 7,200 gallons/day
- 7,200 gallons x 365 days = 2,628,000 gallons/year
- Approximate cost to treat @\$3/ thousand gallons=\$7,884 per year.
- Approximate cost to fully restore a 10 ft MH structure, water-tight with corrosion protection: \$3,500.

Mike O'Reilly, senior member of Cottage Grove's Public Works maintenance crew, confirmed the success of the project. "Underground Tech repaired the worst manholes that had been accumulating toilet paper, solids, and collecting very high I&I," shared O'Reilly. "The finished manholes were like new or even better because of the bright white finish of the applied coating. Except for some drips from the manhole lid, after 18 months there are no pin hole leaks or streaks in the manhole walls."

Anything done to mitigate I&I in the collection system can have an immediate return-on-investment. So, when opportunity knock in the form of infiltration and inflow in manholes, answer the call.

Don Rigby is with Logiball Inc. and is NASSCO Manhole Committee Chair.